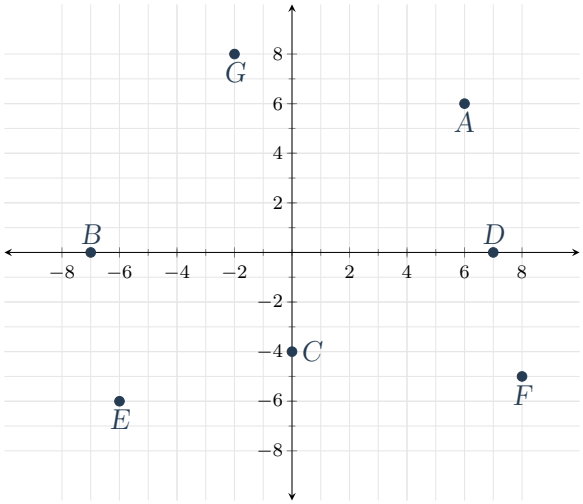
Part 1

Graphs and Relations

RaG1.tex

Exercise 1 *Give the Cartesian coordinates for each point on the graph:*



$$A = \left(\boxed{6}, \boxed{6}\right)$$
$$B = \left(\boxed{-7}, \boxed{0}\right)$$
$$C = \left(\boxed{0}, \boxed{-4}\right)$$
$$D = \left(\boxed{7}, \boxed{0}\right)$$
$$E = \left(\boxed{-6}, \boxed{-6}\right)$$
$$F = \left(\boxed{8}, \boxed{-5}\right)$$
$$G = \left(\boxed{2}, \boxed{8}\right)$$

RaG2.tex

Exercise 2 *For each given point, provide the quadrant in which it lies.*

(a) $(1, -2)$ *is in Quadrant* $\boxed{IV}$.

(b) $(72, 5)$ *is in Quadrant* $\boxed{I}$.

(c) $(-2.4, -2)$ *is in Quadrant* $\boxed{III}$.

(d) $(6, -0.8)$ *is in Quadrant* $\boxed{IV}$.

(e) $(-3, 2)$ *is in Quadrant* $\boxed{II}$.

(f) $(-\pi, \pi)$ *is in Quadrant* $\boxed{II}$.

`RaG3.tex`

Exercise 3 *Consider the relation with points of the form* (x, y)*, where* x *represents a distance given in miles, and* y *represents the same distance in feet. For example,* $(1, 5280)$ *is in the relation.*

Fill in the following table with the correct values of the relation:

Distance in Miles	*Distance in Feet*
0	$\boxed{0}$
$\boxed{1}$	5280
3	$\boxed{15840}$
6	$\boxed{31680}$
$\boxed{10}$	52800

`RaG4.tex`

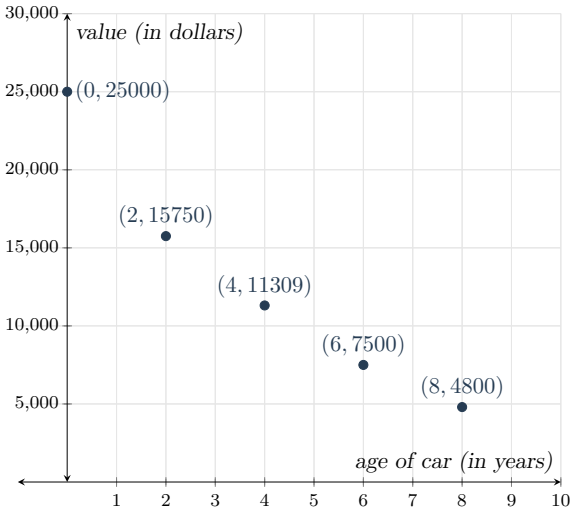
Exercise 4 *Consider the relation with points of the form* (x, y)*, where* x *represents a volume given in liters, and* y *represents the same volume in milliliters. For example,* $(1, 1000)$ *is in the relation.*

Fill in the following table with the correct values of the relation:

Volume in Liters	*Volume in Milliliters*
0	$\boxed{0}$
$\boxed{1}$	1000
3	$\boxed{3000}$
16	$\boxed{16000}$
$\boxed{528}$	528000

RaG5.tex

Exercise 5 *Look at the following graph:*



Fill in the table below to give another representation of the relation given in the graph.

Age of Car	*Value*
0	25000
2	15750
4	11309
6	7500
8	4800

RaG6.tex

Exercise 6 *For each given point, say whether it is a member of the relation given by* $x^2 - y^2 = 1$.

(a) *Is* $(1, -2)$ *in the relation?*

Multiple Choice:

(i) *Yes*
(ii) *No* ✓

(b) *Is* $(1, 0)$ *in the relation?*

Multiple Choice:

(i) *Yes* ✓
(ii) *No*

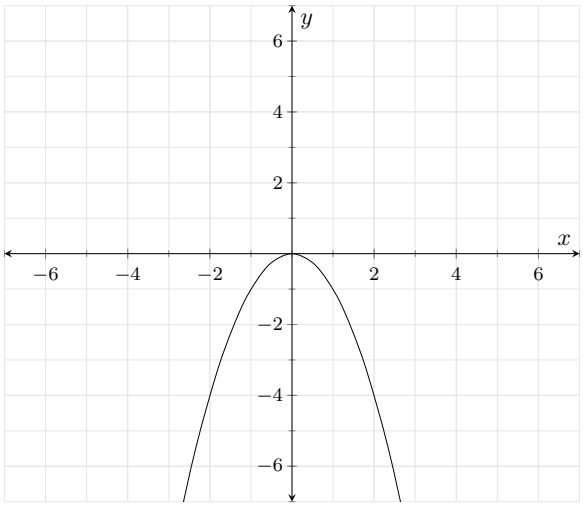
(c) *Is* $(0, -1)$ *in the relation?*

Multiple Choice:

(i) *Yes*
(ii) *No* ✓

`RaG7.tex`

Exercise 7 *Look at the following graph:*



Which type of famous function from the chapter is represented above?

Multiple Choice:

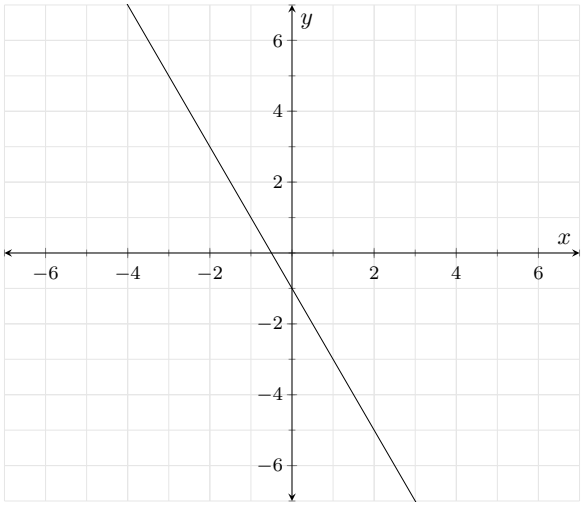
(a) *Parabola* ✓

(b) *Exponential*

(c) *Linear*

`RaG8.tex`

Exercise 8 *Look at the following graph:*



Which type of famous function from the chapter is represented above?

Multiple Choice:

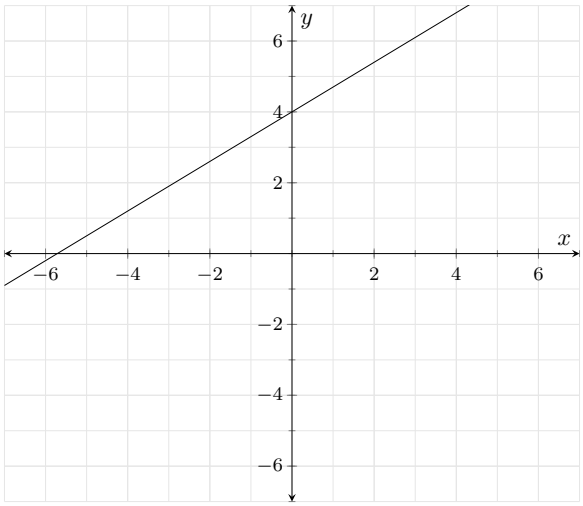
(a) *Parabola*

(b) *Exponential*

(c) *Linear* ✓

`RaG9.tex`

Exercise 9 *Look at the following graph:*



Which type of famous function from the chapter is represented above?

Multiple Choice:

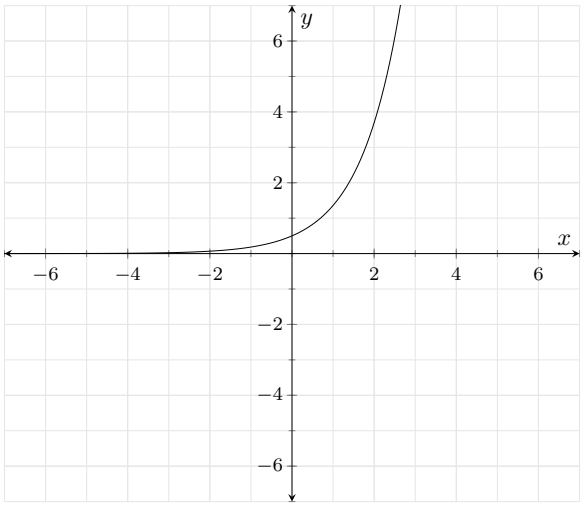
(a) *Parabola*

(b) *Exponential*

(c) *Linear* ✓

`RaG10.tex`

Exercise 10 *Look at the following graph:*



Which type of famous function from the chapter is represented above?

Multiple Choice:

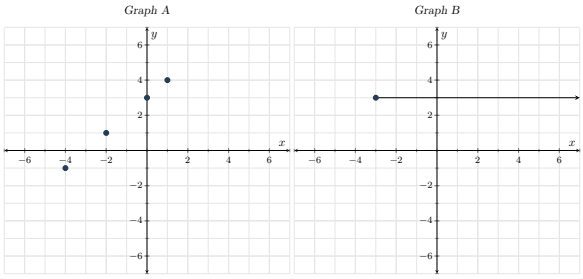
(a) *Parabola*

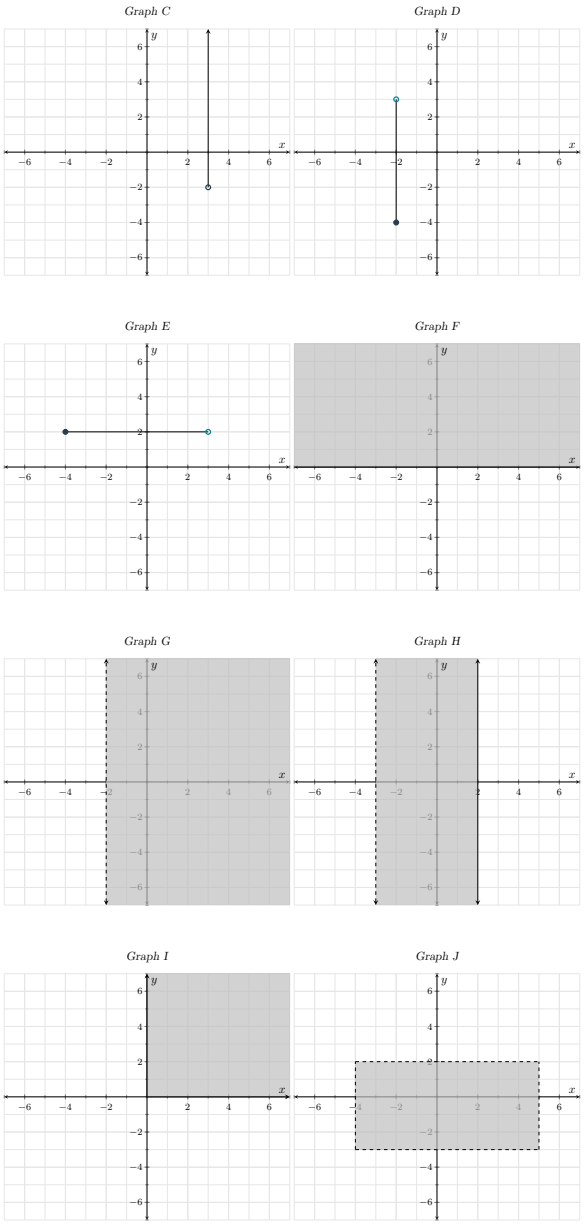
(b) *Exponential* ✓

(c) *Linear*

`RaG11.tex`

Exercise 11 *Look at the following graphs and match each to a description of a relation below:*





(a) *The points* (x, y) *with* $-3 < x \leq 2$.

Multiple Choice:

(i) A

(ii) B

(iii) C
(iv) D
(v) E
(vi) F
(vii) G
(viii) H ✓
(ix) I
(x) J

(b) *The points* (x, y) *with* $x = -2$ *and* $-4 \leq y < 3$.

Multiple Choice:

(i) A
(ii) B
(iii) C
(iv) D ✓
(v) E
(vi) F
(vii) G
(viii) H
(ix) I
(x) J

(c) *The points* (x, y) *with* $x > -2$.

Multiple Choice:

(i) A
(ii) B
(iii) C
(iv) D
(v) E
(vi) F
(vii) G ✓
(viii) H
(ix) I
(x) J

(d) *The points* (x, y) *with* $x \geq 0$ *and* $y \geq 0$.

Multiple Choice:

(i) A
(ii) B
(iii) C
(iv) D
(v) E
(vi) F
(vii) G
(viii) H
(ix) I ✓
(x) J

(e) *The points* (x, y) *with* $-4 < x < 5$ *and* $-3 < y < 2$.

Multiple Choice:

(i) A
(ii) B
(iii) C
(iv) D
(v) E
(vi) F
(vii) G
(viii) H
(ix) I
(x) J ✓

(f) *The points* (x, y) *with* $-4 \leq x < 3$ *and* $y = 2$.

Multiple Choice:

(i) A
(ii) B
(iii) C
(iv) D
(v) E ✓

(vi) F
(vii) G
(viii) H
(ix) I
(x) J

(g) *The points* (x, y) *with* $-3 \leq x$ *and* $y = 3$.

Multiple Choice:

(i) A
(ii) B ✓
(iii) C
(iv) D
(v) E
(vi) F
(vii) G
(viii) H
(ix) I
(x) J

(h) *The points* (x, y) *with* $y \geq 0$.

Multiple Choice:

(i) A
(ii) B
(iii) C
(iv) D
(v) E
(vi) F ✓
(vii) G
(viii) H
(ix) I
(x) J

(i) *The points* $(-4, -1)$, $(-2, 1)$, $(0, 3)$, *and* $(1, 4)$.

Multiple Choice:

(i) A ✓
(ii) B
(iii) C
(iv) D
(v) E
(vi) F
(vii) G
(viii) H
(ix) I
(x) J

(j) *The points* (x, y) *with* $x = 3$ *and* $y > -2$.

Multiple Choice:

(i) A
(ii) B
(iii) C ✓
(iv) D
(v) E
(vi) F
(vii) G
(viii) H
(ix) I
(x) J